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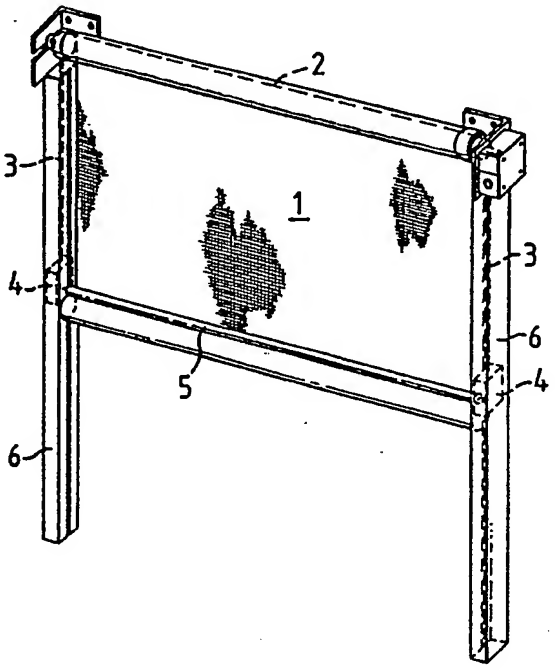
(54) Roll up door.

(57) A flexible roll up closure member (1) , such as a roll up door, for an opening has its edges running in slots in side guide channels (6). The edges are extended so as to be unable to pass through the slots and a wire (3) carrying a weight passes through each extended edge. The closure member (1) with its extended edges and the wire are able to be rolled into a roller.

FIG.1



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ROLL-UP DOOR

This invention relates to a closure for an opening, and has particular reference to a roll-up door suitable for use indoors in, for example, industrial buildings and the like.

Door closures are known which are of the type in which a flat member moves up and down across an aperture with the edges of the flat member constrained to move in channels or track members. In order to retain the edges within the channels elements of a dimension greater than the width of the mouth of the channels have been secured to the edges at intervals or along the whole of their length. It has also been proposed to provide a door which is flexible to the extent that if impacted by a vehicle it will allow the flat member to spring out of the the track members under a normal impact. While some elements operate successfully to retain the edges of rigid flat members in the channels, they cannot resist normal impact without damage being done to the door by springing the door from the track members. It is therefore necessary to provide a method and means of retaining the edges of such flexible closures within the channels and it is an object of the present invention to achieve this.

According to the present invention, there is provided a closure for an opening which closure comprises a pair of track members in spaced parallel relationship one with the other, each of said members being hollow and having a longitudinal slot extending from at least one end thereof in the plane of the opening,
roller means disposed between said members and in juxtaposition with said one end thereof,
a closure member adapted to roll and unroll on said roller means, each side edge of which enters the longitudinal slot in a track member for sliding relationship therein,
retaining means provided at the edge of the closure member adapted to move within the hollow portion of each track member to prevent removal of the edges of the closure member laterally therefrom at least under the influence of normal impact forces on the closure member itself,
said retaining means being rollable with said closure member on said roller means, and
said retaining means comprising a loaded element located in a surrounding section at the edge of the closure member.

The retaining means may be comprised by folding the edge of the closure member to form the surrounding section at the edge of the closure member, or alternatively a separate surrounding section may be fixed to the edge of the closure member.

The loaded element may be a wire or a like longitudinally extending flexible element and may be positioned along the centre of the track member. The element is preferably loaded with a weight. A stiffening member may be provided at the bottom of the closure member and the stiffening member can conveniently be converted to the weight.

Following is a description by way of example only and with reference to the accompanying drawings of a method of carrying the invention into effect.

In the drawings:-

Figure 1 is a perspective view of a closure in accordance with the present invention.

Figure 2 is a part-sectional detail of Figure 1.

Figure 3 is a section on line III-III of Figure 2.

Referring to the drawings, the roll up door in accordance with the specific embodiment has at least one flexible door-leaf 1 arranged to be wound onto and off a roll-up roller 2. Each side of door-leaf is folded back as shown in Figure 3 to form a surrounding section adapted to accommodate a wire 3 or similar element. One end of the wire is attached to and is capable of being wound up on the roller 2 or may have a separate winding drum secured to the same shaft. At the other end of the wire, a weight 4 or similar biasing means is attached to load the wire. The bottom end of the door-leaf 1 is inter-connected with a rigid profile member 5, the ends of which are connected with the weights 4. The weight, the folded edge of the door-leaf and the associated wire are inserted in a longitudinal track member in the form of a channel to define a tube 6 having a longitudinal slot extending the length thereof. The tube constitutes or is part of a side frame and the wire is movable substantially along the centre line of the tube. The folded edge of the door-leaf enters the tube through said longitudinal slot, the opening has a width sufficient for the door-leaf but not sufficient to allow passage of the wire. Alternatively, the opening of the tube and/or the retaining means may be elastic such that the wire may be "snapped in" to position the hollow tube and may be releasable therefrom under the influence of abnormal impact forces on the door-leaf itself.

In normal use the said edges of the door-leaf are fixed into the tube so that when the pressure on both sides of the door leaf is different, the door-leaf can deform only to a limited extent. The weight has a double function in that it serves, in conjunction with a rigid profile of the bottom end of the door-leaf to keep the door-leaf in a stretched condition during movements of opening and closing of

the door-leaf, and when the door is closed. In the last position the stretched door- leaf substantially abuts the ground thereby preventing floor draughts. The weight further keeps the wires in tension along the centre line of the tube and maintains lateral stretch of the door-leaf material.

Claims

1) A closure for an opening comprising a pair of track members in spaced parallel relationship one with the other, each of said members being hollow and having a longitudinal slot extending from at least one end thereof in the plane of the opening,
roller means disposed between said members and in juxtaposition with said one end thereof,
a closure member adapted to roll and unroll on said roller means, each side edge of which enters the longitudinal slot in a track member for sliding relationship therein,
retaining means provided at the edge of the closure member adapted to move within the hollow portion of each track member to prevent removal of the edges of the closure member laterally therefrom, at least under the influence of normal impact forces on the closure member itself,
said retaining means being rollable with said closure member on said roller means, and
said retaining means comprising a loaded element located in a surrounding section at the edge of the closure member.

2) A closure as claimed in claim 1 in which the retaining means is comprised by folding the edge of the closure member to form the surrounding section at the edge of the closure member.

3) A closure as claimed in claim 1 in which the retaining means comprises a separate surrounding section fixed to the edge of the closure member.

4) A closure as claimed in any preceding claim in which the element is loaded by a weight.

5) A closure as claimed in any preceding claim in which the loaded element is a wire or a like longitudinally extending flexible element.

6) A closure as claimed in any preceding claim in which the loaded element is positioned along the centre line of the track member.

7) A closure as claimed in any preceding claim and including a stiffening member at the bottom of the closure member.

8) A closure as claimed in claim 7 when dependent on claim 4 in which the stiffening member is attached to the weight.

FIG. 1

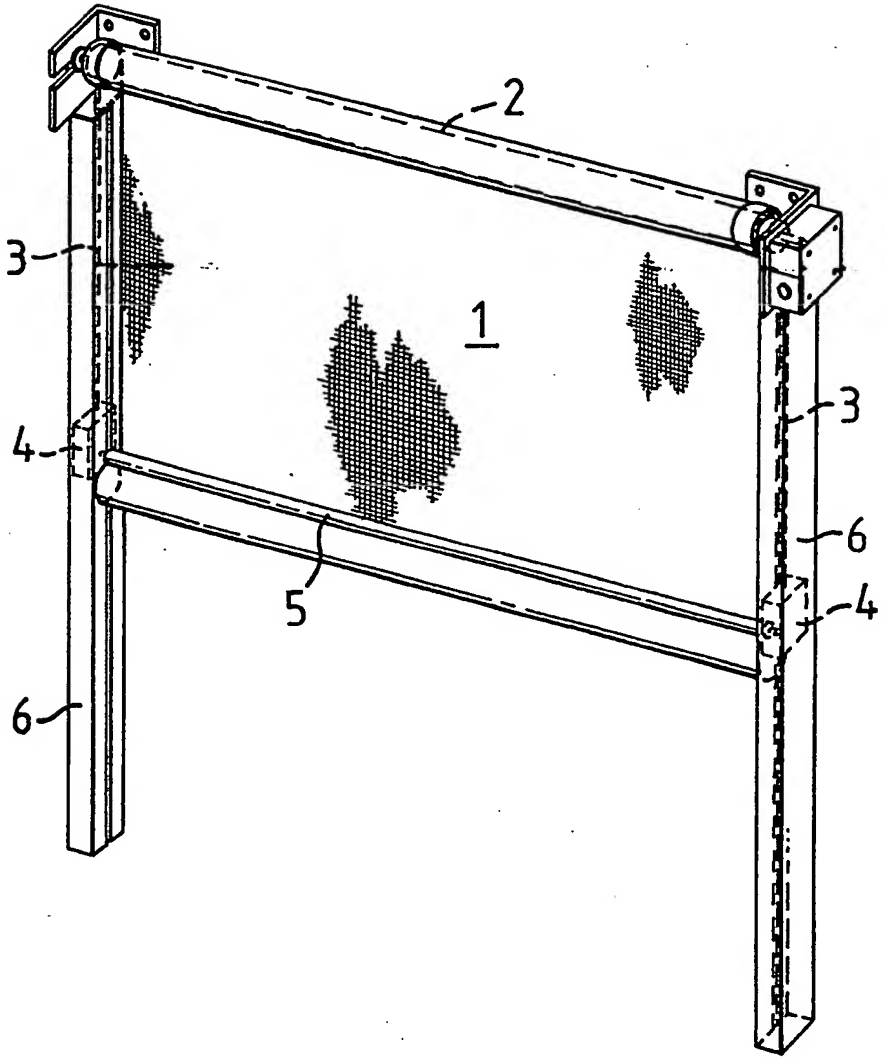


FIG. 2

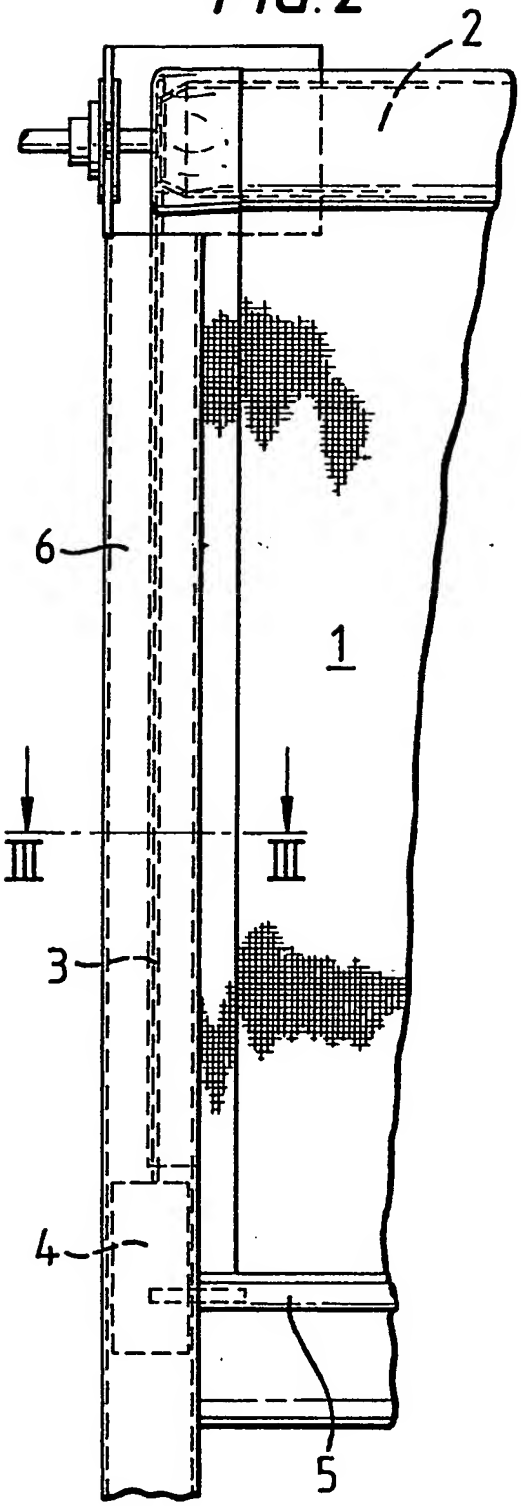
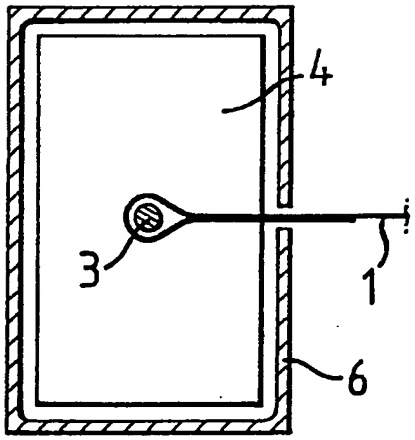


FIG. 3



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EUROPEAN SEARCH REPORT

Application Number

EP 89 20 2821

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
Y	CH-A- 455 231 (ENGLER & CO. AG) * Column 2, lines 39,40; column 3, lines 1-5,38-40,48-51; column 4, lines 1-7; figures *	1-7	E 06 B 9/56
A	---	8	
Y	GB-A- 518 040 (ROBERTSHAW) * Page 2, lines 60-64,85-96; figures *	1-7	
A	---		
A	CH-A- 192 088 (JEKER et al.) * Whole document *	1-8	
A	---		
A	AU-A- 562 959 (PEARLE) * Page 5, lines 4-25; figures 1,2 *	1-8	

			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			E 06 B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	12-01-1990	KUKIDIS S.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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